FINANCIAL INSTRUMENTS USED TO SUPPORT THE GREEN TRANSITION IN ROMANIA

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Abstract

The transition to a green economy represents one of the most complex challenges of the current decades, involving profound transformations of the energy, industrial and financial sectors. The main objective of this paper is to analyze and systematize the main financial instruments that contribute to supporting the green transition, with a focus on their role in mobilizing private and public capital for sustainable projects. The study examines a wide range of mechanisms – from green bonds, sustainable loans and ESG investment funds, to innovative schemes such as blended finance and sustainability-related derivatives. The research combines theoretical analysis of the European and international framework with an empirical assessment of the efficiency of these instruments in attracting investments in renewable energy, sustainable infrastructure and energy efficiency projects in Romania. The research conclusions emphasize the importance of collaboration between financial institutions, public authorities and investors to create an ecosystem favorable to green financing. Through a comparative and multidimensional approach, the paper provides a theoretical and practical basis for improving public policies and existing financial instruments, contributing to accelerating the transition to a low-carbon economy and achieving sustainable development goals.

***Keywords**: financial instruments, green transition.*

***Jel classification**: G, H*

Introduction

The global green transition is emerging as an increasingly pressing imperative, driven by the climate crisis, biodiversity loss and the limits of natural resources. The literature suggests that for the Paris Agreement and the Sustainable Development Goals to be achievable, significant amounts of public and private capital must be mobilized for low-emission projects, renewable energy, sustainable infrastructure and innovative technologies (World Bank, 2022; OECD, 2021). These financial instruments, green bonds, green credits, carbon pricing

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schemes, green subsidies, are becoming essential means of correcting market imperfections, internalizing negative environmental costs and stimulating green investments (Flammer, 2020).

Globally, there is empirical evidence that green bond issuances have a positive impact on the issuer's environmental performance, although the results on financial performance are mixed (Khan, 2025). Studies also show that regulations such as the EU Taxonomy, the standardized reporting obligation and ESG criteria are becoming increasingly important in investment decisions, contributing to the credibility and transparency of green financing (Mandatory Disclosure of Standardized Sustainability Metrics, 2022).

Literature Review

From the Romanian perspective, the context is particular: the economy still has a significant dependence on fossil fuels, and coal regions are in a difficult process of reconversion (Making Romania Fit and Resilient…, 2023). In addition, the study "Financial Instruments for Decarbonization: Likely Pathways in Romania" shows that banking instruments, such as green loans, have the greatest potential to mobilize energy transformation in the country, given the structure of the national financial market, dominated by the banking sector, compared to capital markets that are still relatively small (Murafa, 2023).

Another important reason for Romania is the need to increase the level of awareness and adoption of green financial products. A comparative study between Poland and Romania indicates that, although interest is relatively high in both countries, the level of awareness and knowledge of green instruments is lower in Romania (Siemionek-Ruskań et al., 2022). This limits the ability of local companies and banks to develop sophisticated green products and benefit from the support of European policies. Furthermore, recent literature shows that in Romania, green loans granted by financial institutions present a lower credit risk compared to conventional loans (Neagu, 2024). This difference suggests that green financial instruments can not only be environmentally efficient, but can also have advantages in terms of financial stability, which makes them more attractive for the domestic financial system.

In conclusion, the topic of financial instruments for the green transition is essential both globally for achieving climate goals, for mobilizing capital and regulation, and in Romania for adapting the economic structure, exploiting the potential of the banking sector, improving awareness, and managing regional and social equity. Studying this topic provides policymakers with solid data and recommendations for projects, regulations, and strategies that will make the green transition not just wishful thinking, but a practical reality.

Methodology and Data

The methodology of this research is based on a mixed qualitative and quantitative approach, aiming to analyze the financial instruments used to support the green transition and assess their impact globally and in Romania. This methodological combination allows the integration of both theoretical and institutional perspectives, as well as empirical and statistical data (Creswell & Plano Clark, 2018).

A first methodological step is the documentary and literature analysis, by examining academic articles published in prestigious international journals, reports of international organizations (World Bank, OECD, IMF, European Commission), as well as studies applied to Romania. This analysis aims to identify the main types of green financial instruments

(bonds, loans, transition funds, carbon taxes) and to capture how they are used to support decarbonization objectives (Flammer, 2020; Khan, 2025).

Secondly, the research uses comparative analysis to assess international experiences in the use of green financial instruments and relate them to the case of Romania. For example, studies show that developed markets in Western Europe have a high level of green bond issuance, while Romania is still at an early stage, based mainly on green loans and European structural funds (Murafa, 2023; Siemionek-Ruskań et al., 2022). This method allows highlighting gaps and opportunities for the development of the Romanian green market. A third stage is the application of a quantitative analysis based on available statistical data.

The research will use data from the National Bank of Romania, Eurostat and the World Bank on the volume of green loans, green bonds and transition funds attracted in Romania. For example, the comparative analysis of green and conventional bond yields or the credit risk of green loans provides indications on the attractiveness and sustainability of these instruments (Neagu, 2024). The methodology also includes a case study applied to Romania, targeting the Just Transition Fund and its impact on mining regions such as Banatul Montan and Valea Jiului. This case study allows for understanding how financial instruments support the transition at regional level and how good practices identified in other EU Member States can be replicated (IMF, 2023; World Bank, 2022 and 2023).

To complete the analysis, the research will also integrate an exploratory component based on interviews with experts from the financial sector (commercial banks, NBR, Ministry of Finance) and representatives of local authorities from the regions targeted by the green transition.

This qualitative approach provides a direct perspective on the obstacles and opportunities identified by practitioners, complementing the statistical and theoretical analysis (Creswell & Creswell, 2017). The proposed methodology is therefore integrated, combining documentary analysis, comparative analysis, quantitative data evaluation, case studies and qualitative research, to ensure a complex and applied understanding of how financial instruments contribute to supporting the green transition, both globally and in Romania.

Results

A first expected scientific result of the research consists in identifying and systematizing the main green financial instruments used at global and national levels, such as green bonds, green credits, transition funds and carbon taxes. T

his contribution is relevant because the specialized literature emphasizes the lack of a unitary taxonomy and a homogeneous classification of these instruments, which creates difficulties in the comparative analysis of their impact (Flammer, 2020; OECD, 2021). Thus, the research will bring value by developing a conceptual framework applicable both in international analysis and in the case of Romania.

Table 1: Identifying and systematizing the main green financial instruments.

Green Financial Instrument	Definition / Objective	International Level	National Level (Romania)	Examples / Source
Green Bonds	Debt securities issued to finance sustainable projects	Highly developed market (USA, EU)	Emerging market (first issuance 2021 Ministry of Finance)	Flammer (2020), OECD (2021)
Green Loans	Loans granted for low-carbon investments	Mainly banking in Asia/Europe	Growing portfolio at BCR, BRD, Raiffeisen	Neagu (2024)
Transition Funds	Funds dedicated to sectors in transition	EU Just Transition Fund	Just Transition Mechanism in mining regions	IMF (2023)
Carbon Taxes	Taxes applied to GHG emissions	Implemented in 40+ countries	At discussion stage (extended ETS)	OECD (2021

Source: Flammer (2020), OECD (2021), Neagu (2024), IMF (2023).

A second expected result is the assessment of the impact of financial instruments on environmental performance and financial stability. Existing studies show that green bonds are associated with improved ESG indicators, but the results regarding financial returns and risks are mixed (Khan, 2025). In the case of Romania, recent research has demonstrated that green loans present a lower credit risk compared to conventional ones (Neagu, 2024). This finding suggests that the research can contribute to strengthening the empirical evidence on the benefits of green financial instruments also in the context of an emerging economy.

Table 2: Financial instruments on environmental performance and financial stability

Instrument	Impact on Environment	Impact on Financial Stability	Findings from Literature
Green Bonds	+ ESG indicators, emissions reduction	Mixed results regarding returns and risk	Khan (2025)
Green Loans	+ Sustainable investments	Lower credit risk vs. conventional loans	Neagu (2024)
Carbon Taxes	Emissions reduction	May affect sector competitiveness but increases fiscal revenues	OECD (2021)

Source: Khan (2025), Neagu (2024), OECD (2021).

Another anticipated outcome is the comparative analysis between international and Romanian experiences, which will allow highlighting gaps and good practices.

For example, the literature shows that in Western Europe capital markets play a central role in financing the transition, while in Romania the banking sector is dominant, which limits the diversity of available instruments.

Therefore, the research will make an original contribution by relating the Romanian situation to the European and global context.

Table 3: Comparative analysis between international and Romanian experiences

Compared Element	Western Europe / Global	Romania
Dominant actor	Capital markets (funds, green bonds)	Banking sector (green loans)
Instrument diversity	High (ETS, carbon taxes, mature green bonds)	Low (green bonds at early stage, carbon taxes incipient)
Regulation & standards	EU taxonomy clear, international standards	Partial alignment, lack of full mechanisms
Good practices examples	France – large green bond issuance; Germany – extended ETS	Just Transition Fund, green loans with lower risk

Source: Processed from literature and institutional reports.

An important outcome will be the assessment of the social and regional dimension of the green transition. International literature emphasizes that just transition represents a major challenge, as the costs of decarbonization are unevenly distributed (World Bank, 2022). In Romania, mining- dependent regions, such as Banatul Montan and Valea Jiului, face major social risks, and financial instruments such as the Just Transition Fund can provide solutions for economic reconversion (IMF, 2023). The research will contribute to a deeper understanding of how these instruments can support equity and social cohesion.

Table 4: Evolution of green financial instruments

Romanian Region	Social Challenges	Available Instruments	Research Relevance
Valea Jiului	Loss of mining jobs	Just Transition Fund	Case study for just transition
Banatul Montan	Need for economic reconversion	EU training programs and grants	Example for social equity

Source: Processed from literature and institutional reports from this regions.

Last but not least, it is expected to provide applicable recommendations for strengthening the institutional and financial framework in Romania. Compared to previous research, which mainly addressed theoretical and descriptive dimensions (Flammer, 2020; OECD, 2021), the present research will provide results adapted to the Romanian specifics, integrated into the current economic reality. This aspect is particularly relevant for decision-makers and the financial sector, which need to align existing instruments with the requirements of the European Green Deal and the objectives of climate neutrality by 2050.

Table 5: Recommendations for strengthening the institutional and financial framework in Romania

Recommendation Area	Proposed Measures
Instrument diversification	Develop the sovereign and corporate green bond market
Social integration	Extend just transition mechanisms for vulnerable regions
Regulation & transparency	Adopt a national taxonomy compatible with the EU one
Financial stability	Continue empirical studies on risks and returns of green instruments

Conclusions

The analysis of the financial instruments used to support the green transition in Romania highlights the crucial role of green bonds, sustainable loans and transition funds in mobilizing the necessary capital. While developed markets rely on the diversification of instruments, Romania is still dependent on the banking sector. The results suggest that improving the legislative framework, increasing awareness and accelerating the development of capital markets are essential. Moreover, the social and regional dimension of the transition cannot be neglected, and the Just Transition Fund represents a positive example of an instrument adapted to the national context. Thus, an integrated approach, based on cooperation between institutions, public authorities and investors, is fundamental to accelerating the transition to a green economy.

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